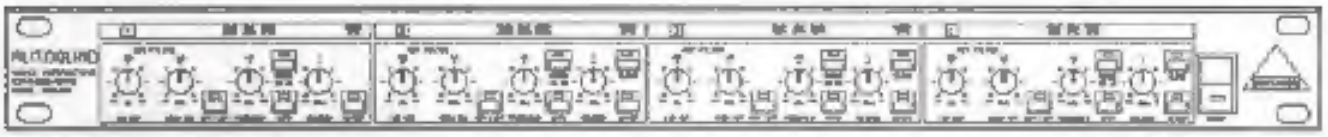


AUTOQUAD

The Interactive Quad Expander/Gate Model XR 2400

VERSION 2.0 September 1992

Text and layout: Dipl.-Ing. Ulrich Behringer

BEHRINGER®
Spezielle Studiotechnik GmbH

CONTROLS

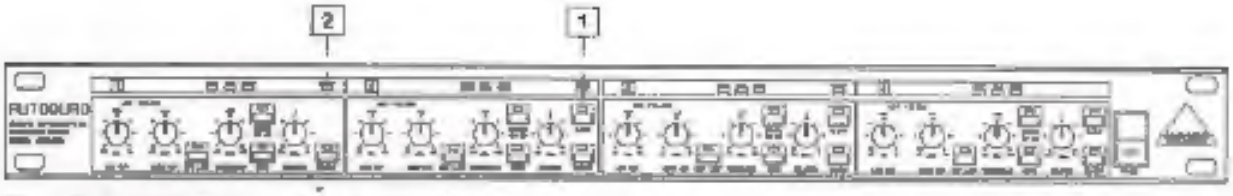


Fig. 11 The control surface of the AUTOQUAD

The Behringer AUTOQUAD has four identical channels. Each channel is equipped with 4 push button switches, 4 rotary controls and 8 LEDs. A total of 3 SLAVE switches and 3 MASTER LEDs are available for the FlexLink System.

1 SLAVE switch

With the SLAVE switch pressed the respective channel of the AUTOQUAD is set to slave mode, i.e., is controlled by the adjacent channel to the left. In this case, the control signal for instance of channel 2 is replaced by the signal provided by channel 1. When activating a SLAVE switch, all controls and switches of the respective channel are inoperative, an exception being the KEY LISTEN and the IN/OUT switches, and all parameters of the slaved channel are controlled by the master channel.

2 MASTER LED

The MASTER LED indicates which channel has taken over the master function in couple mode. When linking several channels this function proves to be very useful, since it gives the user a clearly arranged survey of the unit configuration.

6.1 EXPANDER SECTION

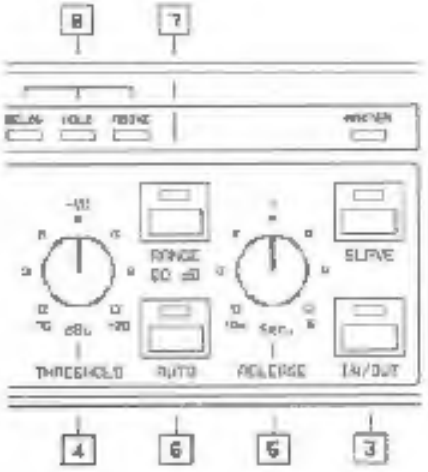


Fig. 12 Control surface of the Expander section

3 IN/OUT switch

This switch activates the relay and engages the corresponding channel. The switch has a "Hard Bypass" function. This means that when the switch is not depressed (OUT) or the unit is turned off, the input to output connections are direct. The IN/OUT switch is used to make direct A/B comparisons between source material and the processor's effected signal.

4 THRESHOLD control

This control adjusts the threshold level for the expander/gate section in the range of -70 to +20 dBu. Signals below this level cause attenuation. As the key signal passes through threshold, the combined hold/release functions are triggered, dropping the gain of the Expander/Gate to the value determined by the RANGE switch (see item 7 "RANGE switch").

5 RELEASE control

This control adjusts the time taken for the gain to be reduced to a value set by the RANGE switch. To avoid the "chatter" effect at the threshold point, which is common in conventional gates, a hold time has been added to the release time which delays the onset of the release process (Interactive Hold Control). The hold time is derived interactively from the release time.

The control range lies between 10 milliseconds and 5 seconds.

6 AUTO switch

The AUTO switch determines the operating mode of the respective channel. With the AUTO function switched off, the section operates as an ultra-fast gate capable of gating even percussive signals without any loss in the signal edge.

Switching the AUTO function on also activates the IRC *(Interactive Ratio Control)* expander. This interactive control function allows for a programme-dependent expansion of complex signals. Both the attack time and the ratio curve vary in dependence of the programme material. This results in problem-free setting of the controls and an "inaudible" expansion process.

7 RANGE control

This switch determines the maximum amount of attenuation.

The range is switchable from 20 to 80 dB.

8 BELOW/HOLD/ABOVE LEDs

The arrangement of the LEDs in this application is called "traffic lights" and indicates the operating status of the unit. The BELOW LED (red) indicates that the key signal is below threshold. The HOLD LED (yellow) indicates that the hold/release circuit is active. The ABOVE LED (green) indicates that the key signal is above threshold.

5.2 KEY FILTER SECTION

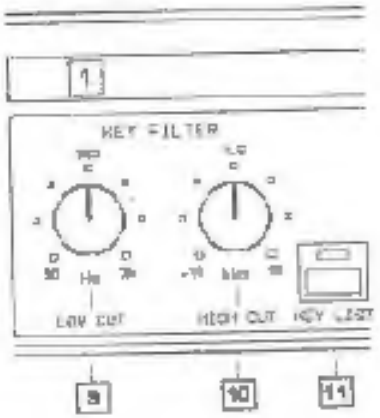


Fig. 13 Control surface of the Key Filter section

9 LOW CUT control

This control adjusts the cut-off frequency at which the high pass filter rolls off low frequencies in the sidechain path. It has a slope of 12 dB/octave and has a control range from 30 Hz to 3 kHz.

10 HIGH CUT control

This control adjusts the cut-off frequency at which the low pass filter rolls off high frequencies in the sidechain path. It has a slope of 12 dB/octave and has a control range from 150 Hz to 15 kHz.

11 KEY LISTEN switch

Using this switch will enable you to connect the key control signal to the audio output, whilst at the same time muting the audio input. This function provides you with the ability to monitor the key filter section. The KEY LISTEN function will assist you with tuning the key filters.

Please note when the KEY LISTEN switch is engaged, the audio processing facility of the respective channel is disabled.

5.3 BACK PANEL LAYOUT OF THE AUTOQUAD

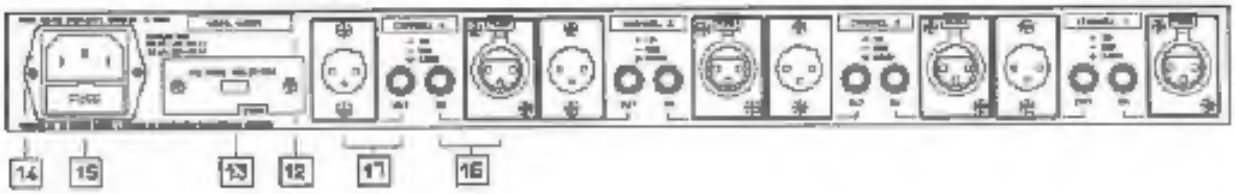


Fig. 14 The back panel layout of the AUTOQUAD

12 SERIAL NUMBER

Please take the time to make a note of the serial number in the space provided on the enclosed warranty registration card. Put the instruction manual in a safe place and return the completed warranty registration card to us within 8 days of purchase, making sure that the dealer stamp has been aquired.

13 OPERATING VOLTAGE SWITCH

Before you connect the unit, please make sure that the displayed voltage corresponds to your mains supply.

14 MAINS CONNECTOR

Please use the enclosed mains cable to connect the unit to the mains power supply.

15 FUSE HOLDER

Please note that, depending on the mains voltage supplied to the unit, the correct fuse type and rate must be installed.

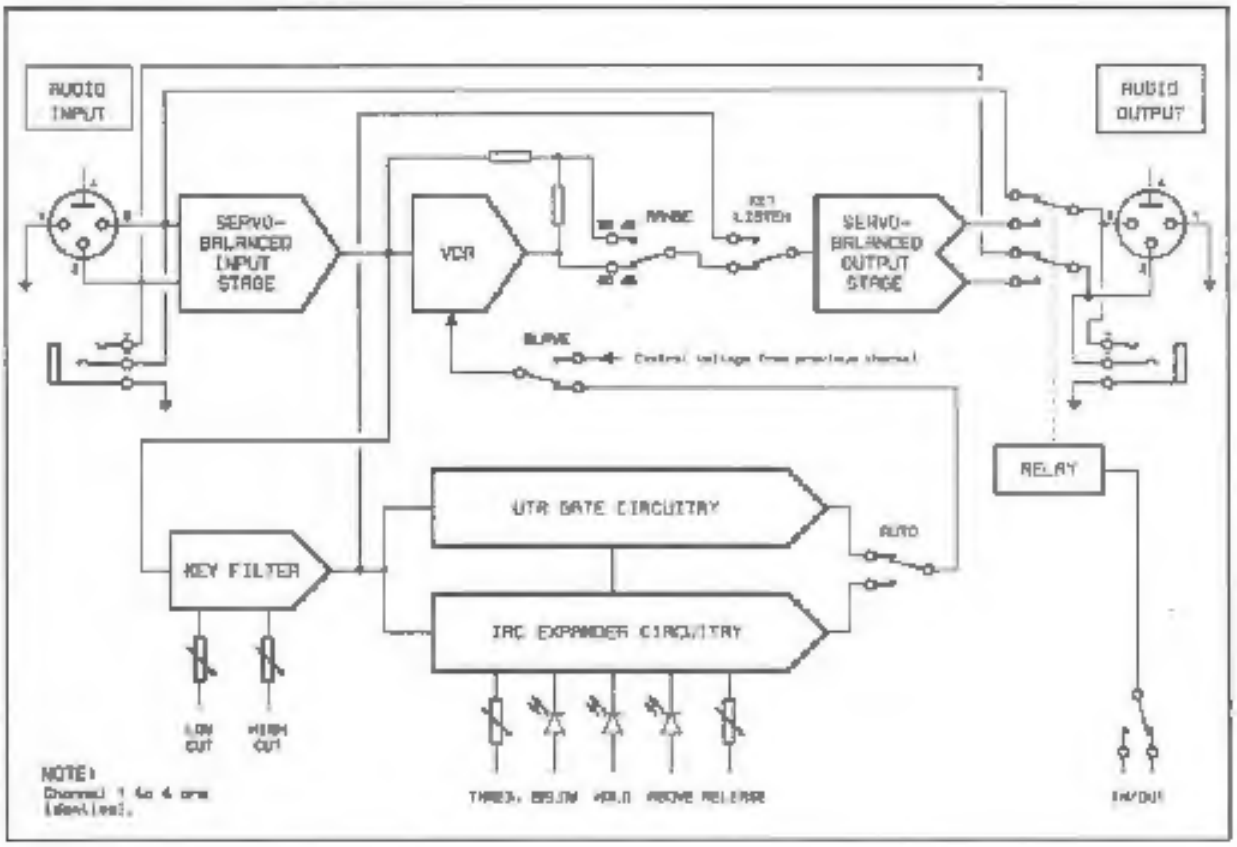
16 AUDIO IN

These are the AUTOQUAD's audio inputs.

17 AUDIO OUT

These are the AUTOQUAD's audio outputs.

BLOCK DIAGRAM



SPECIFICATIONS

AUDIO INPUT

Type	RF filtered, servo balanced input
Impedance	80 kOhms balanced
Nominal Operating Level	-10 dBV to +4 dBu
Max. Input Level	+20 dBu balanced and unbalanced
CMR @ 1 kHz	>40 dB

AUDIO OUTPUT

Type	Electronically servo balanced output stage (optional transformer-balanced) Automatic level correction for unbalanced use (correction 6 dB)
Impedance	<40 Ohms balanced and unbalanced
Max. Output Level	+26 dBm balanced, +20 dBm unbalanced
Bandwidth	5 Hz to 100 kHz, +0, -0.2 dB
THD @ +4 dBu	0.04 % typ.
THD @ +20 dBu	0.1 % typ.
IMD (SMPTE) @ +10 dBu	0.04 % typ.
Noise & Hum, unity gain	-96 dBu
Noise & Hum, fully off	-100 dBu
Crosstalk @ 20 kHz	-80 dBu
CMR @ 1kHz	-80 dB

GATE SECTION (AUTO function switched off)

Type	UTR (Ultra Transient Response) Gate
Threshold	variable (-70 dBu to +20 dBu)
Attack	10 µs
Release	variable (10 ms to 5 seconds)
Range	switchable (20 / 80 dB)

EXPANDER SECTION (AUTO function switched on)

Type	IRC (Interactive Ratio Control) Expander
Threshold	variable (-70 dBu to +20 dBu)
Attack	programme dependent (100 µs to 1 ms)
Release	variable (100 ms to 5 seconds)
Range	switchable (20 / 80 dB)

KEY FILTER SECTION

Low Cut	variable (30 Hz to 3 kHz, 12 dB/octave)
High Cut	variable (150 Hz to 15 kHz, 12 dB/octave)

FUNCTION SWITCHES

In/Out	Relay controlled hard-bypass
Auto	Gate / Expander mode
Key Listen	Monitoring the key filter section
Couple	Linking the four channels in FlexLink mode

INDICATORS

"Below" LED: Key signal level is below threshold
"Hold" LED: Key signal level is at threshold
"Above" LED: Key signal level is above threshold
Master LED: indicating the master channel
LED indicator for each function switch

POWER SUPPLY

Mains Voltages	100-120/200-240 VAC 50-60 Hz
Power Consumption	15 Watts
Fuse	320 mA (100-120 V); 160 mA (200-240 V) slow-blow
Mains Connection	Standard IEC receptacle

PHYSICAL

Dimension	13/4" (44.5 mm)H * 19" (482.6 mm) * 8.5" (217 mm)
Net Weight	3.2 kg
Shipping Weight	4.5 kg